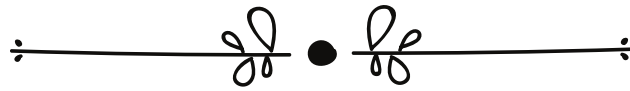


# BIOHACK NOTES



# ECOSYSTEM

- BASED ON ACTIVE RECALL AND SPACED REPETITION
- TARGET 360/360 IN NEET BIOLOGY & 100/100 IN BOARDS!



**PARTH** GOYAL





## • INTRODUCTION

1. Term Ecosystem was given by -
2. Father of Ecology is -
3. \_\_\_\_\_ are the functional unit of nature.



## • ECOSYSTEM - STRUCTURE & FUNCTION

4. Vertical distribution of different species occupying different levels is called \_\_\_\_\_ (NEET)
5. Shrubs occupy the 2nd/bottom layer of vertical strata.
6. In pond ecosystem, the consumers ex - (I)
7. The 4 functions aspects of ecosystem are -
8. Some bacteria also function as decomposers and are found in the bottom of the pond. T/F
9. There is uni-directional movement of energy to higher/lower trophic level.
10. Define primary production.
11. Unit of primary production is \_\_\_\_\_ or \_\_\_\_\_
12. The rate of biomass production is called \_\_\_\_\_ and its unit is \_\_\_\_\_ or \_\_\_\_\_
13. Define Gross Primary Productivity.
14. Write equation relating GPP and NPP.
15. What is secondary productivity ? (NEET)
16. GPP is biomass available for consumption to heterotrophs. T/F
17. The annual NPP of whole biosphere is \_\_\_\_\_ million/billion tons of organic matter.
18. Oceans occupy \_\_\_\_% of surface, and have only \_\_\_\_\_ billion tons of productivity.
19. \_\_\_\_\_ is referred as famer's friend.
20. Decomposition involve 3 processes namely -
21. 2 parts of catabolism are -
22. Detritivores ex - (I) (NEET)
23. Breakdown of detritus into smaller particles is called - (NEET)
24. \_\_\_\_\_ and \_\_\_\_\_ enzymes degrade detritus into simpler inorganic substances. (NEET)
25. The process in above Q. is called - (NEET)
26. Water-soluble organic/inorganic nutrients go down into the soil horizon and get precipitated as unavailable salts. This process is called -
27. Catabolism and fragmentation occur simultaneously. T/F
28. All the decomposition steps operate simultaneously on the detritus. T/F (NEET)



29. \_\_\_\_\_ and \_\_\_\_\_ occur during decomposition of soil. (NEET)
30. Humus is light/dark, amorphous/crystalline substance. (NEET)
31. \_\_\_\_\_ process leads to accumulation of humus what is highly resistant to \_\_\_\_\_ (NEET)
32. Humus undergoes decomposition at an extremely slow rate. T/F
33. What happens in mineralisation ?
34. Decomposition don't require oxygen. T/F
35. Decomposition rate is slow if detritus is rich in - (2)
36. Decomposition rate is fast if detritus is rich in - (2)
37. Most important climate factors that regulate decomposition are - (2) (NEET)
38. Anaerobic environment favours decomposition. T/F (NEET)



## • ENERGY FLOW

39. Sun is the only source of energy for all ecosystems except \_\_\_\_\_ ecosystems.
40. PAR full form - (NEET)
41. Less than \_\_\_\_\_ % of solar radiation is PAR. (NEET)
42. Plants capture only \_\_\_\_\_ % of the PAR.. (NEET)
43. In terrestrial ecosystems, major producers are - (2)
44. Name aquatic ecosystem producers - (3)
45. Secondary carnivores are primary/secondary/tertiary consumers.
46. Molluscs are primary consumers. T/F
47. Saprotrophs secrete digestive enzymes inside/outside their body.
48. In aquatic ecosystems, GFC/DFC is the major conduit for energy flow.
49. Wolf and fishes are primary/secondary/tertiary consumers.
50. Man is the primary/secondary/tertiary consumer.
51. Each trophic level has a certain mass of living material at a particular time called - (NEET)
52. How is standing crop measured ?
53. Transfer of energy follows \_\_\_\_\_ % law.
54. The 3 types of ecological pyramid are - (3)
55. Which type of pyramids can never be inverted ?
56. Which pyramid is inverted in aquatic ecosystem ?
57. A given species may occupy more than one trophic level in the same ecosystem at the same time. T/F
58. Ex of such a species as in above Q.- (1) (NEET)
59. \_\_\_\_\_ are not given any place in ecological pyramids.





## • ECOLOGICAL SUCCESSION

60. Community that are near equilibrium with the environment are called \_\_\_\_\_

61. The sudden/gradual and unpredictable/predictable change in the species composition of a given area is called \_\_\_\_\_ (NEET)

62. The entire sequence of communities that successively change in a given area are called -

63. Primary succession is faster than secondary succession. T/F

64. Why is secondary succession faster ?

65. Ex of areas where primary succession occur - (3)

66. Name the types of succession (based on nature of habitat) - (2)

67. In hydrarch succession, conditions changes from \_\_\_\_\_ to \_\_\_\_\_ (NEET)

68. In xerarch succession, conditions changes from \_\_\_\_\_ to \_\_\_\_\_ (NEET)

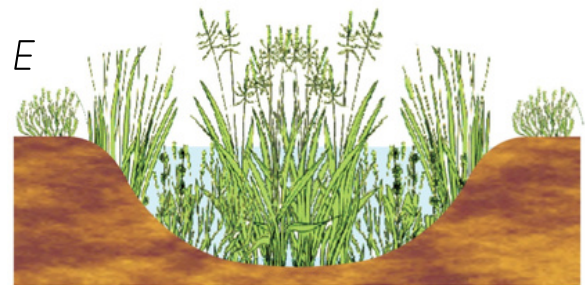
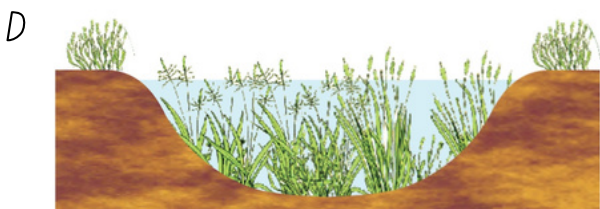
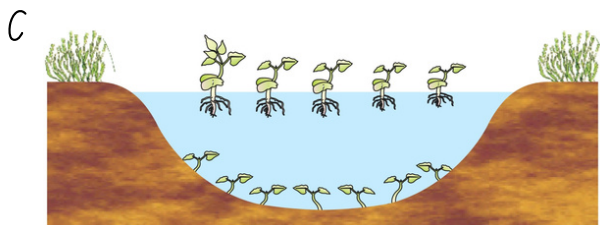
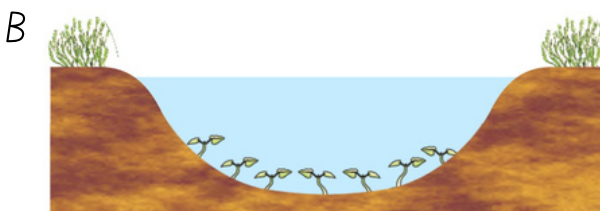
69. The species that invade a bare area are called \_\_\_\_\_. Ex - (1)

70. Reed-swap stage come after marsh-meadow stage. T/F

71. Scrub-stage come before marsh-meadow stage. T/F

72. In primary succession in water, name all the seral stages. (7)

DigaQ. 1





## • NUTRIENT CYCLING

73. The amount of nutrient present in soil at any given time is called - (NEET)

74. Types of nutrient cycling are - (2) (NEET)

75. Ex. of gaseous nutrient cycle - (2)

76. Ex. of sedimentary nutrient cycle - (2)

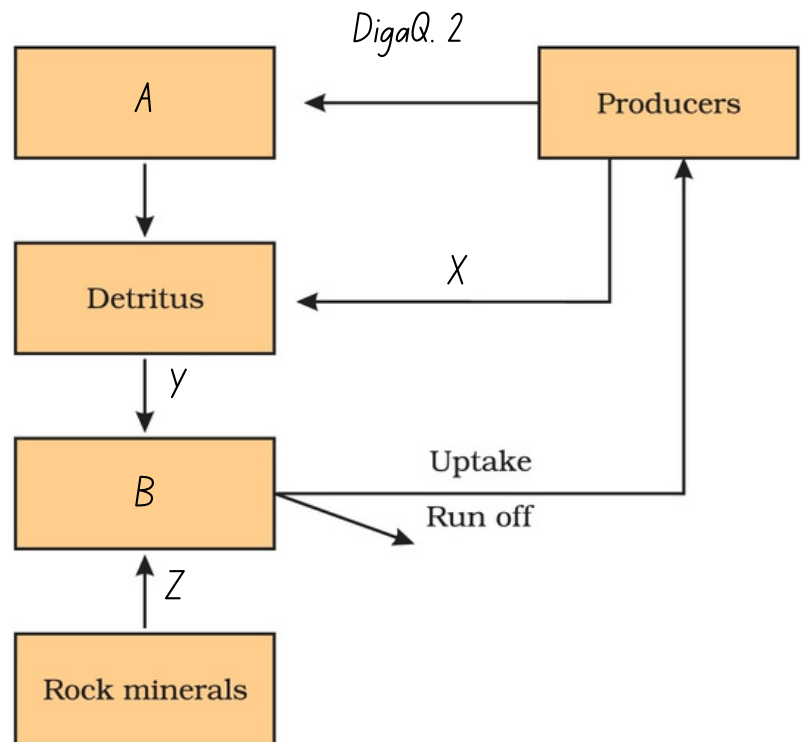
77. Carbon constitutes \_\_\_ % of dry weight of organisms.

78. \_\_\_\_ % of carbon is dissolved in oceans. (NEET)

79. \_\_\_\_\_ kg of carbon is fixed in the biosphere through photosynthesis annually.

80. The natural reservoir of phosphorus is \_\_\_\_\_

81. Two major differences between phosphorus and carbon cycle is - (2)



## • ECOSYSTEM SERVICES

82. \_\_\_\_\_ (scientist name) tried to put a price tag on ecosystem services.

83. The price tag was of \_\_\_\_\_ million/trillion US dollar a year/month.

84. The soil formation accounts for \_\_\_ % of total the cost of ecosystem services.

85. Cost of nutrient cycling was < \_\_\_ % of total.

86. Cost of recreation was < \_\_\_ % of total.

87. Climate regulation cost was \_\_\_ % of total.

88. Habitat for wildlife cost was \_\_\_\_ % of total.





# ECOSYSTEM



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# ANSWERS

## • INTRODUCTION

1. Tansley

2. Eugene Odum

3. Ecosystems

## • ECOSYSTEM

4. Stratification

5. 2nd

6. Zooplankton

7. Productivity, decomposition, energy flow and nutrient cycling

8. T

9. Higher

10. Amount of biomass or organic matter produced per unit area over a time period

11.  $g\ m^{-2}$  or  $kcal\ m^{-2}$

12. Productivity,  $g\ m^{-2}\ yr^{-1}$  or  $kcal\ m^{-2}\ yr^{-1}$

13. rate of production of organic matter during photosynthesis

14.  $GPP - R = NPP$

15. rate of formation of new organic matter by consumers

16. F

17. 170 billion

18. 70, 55

19. Earthworm

20. fragmentation, leaching, catabolism

21. humification and mineralisation

22. Earthworm

23. Fragmentation

24. Bacterial and fungal

25. Catabolism

26. Leaching

27. T

28. T

29. Humification and mineralisation

30. Dark, amorphous

31. Humification, microbial action

32. T

33. humus is further degraded by some microbes and release of inorganic nutrients occur

34. F

35. Lignin and chitin

36. Nitrogen and water soluble substance like sugar

37. Temperature and soil moisture

38. F

## • ENERGY FLOW

39. Hydrothermal ecosystems

40. photosynthetically active radiation

41. 50

42. 2-10

43. Herbaceous and woody plants

44. phytoplankton, algae and higher plants

45. Tertiary consumers

46. T

47. Outside

48. GFC

49. Secondary consumers

50. Tertiary consumer

51. standing crop

52. As biomass

53. 10

54. pyramid of number, pyramid of biomass and pyramid of energy

55. pyramid of energy

56. Pyramid of biomass

57. T

58. Sparrow

59. Saprophytes



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## • ECOLOGICAL SUCCESSION

- 60. Climax community
- 61. Gradual, predictable, ecological succession
- 62. sere(s)
- 63. F
- 64. As some soil is present
- 65. cooled lava, bare rock, newly created pond or reservoir
- 66. Hydrarch and xerarch
- 67. Hydric to mesic
- 68. Xeric to mesic
- 69. Pioneer species, lichens
- 70. F
- 71. F
- 72. Seral stages in water
  - I. Phytoplankton
  - II. Rooted-submerged plants
  - III. Submerged free floating stage
  - IV. Reed-swamp
  - V. Marsh-meadow
  - VI. Scrub
  - VII. Forest or trees

## • NUTRIENT CYCLING

- 73. Standing crop
- 74. Gaseous and sedimentary
- 75. Nitrogen, carbon
- 76. Sulphur and phosphorus
- 77. 49
- 78. 71

79.  $4 \times 10^{13}$

80. Rock

81. Atmospheric input of phosphorus are low, exchange of phosphorus bt environment are organisms are negligible

## • ECOSYSTEM SERVICES

82. Robert Constanza

83. 33 trillion

84. 50

85. 10

86. 10

87. 6

88. 6

## • DigaQs

DigaQ. 1 – Primary succession

A – Phytoplankton

B – Submerged plant stage

C – Submerged free floating plant stage

D – Reed-swamp stage

E – Marsh-meadow stage

F – Scrub stage

DigaQ. 2 – Phosphorus cycling in terrestrial ecosystem

A – Consumers

B – Soil solution

X – Litter fall

Y – Decomposition

Z – Weathering



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SCAN AND DONATE US SO THAT WE  
CAN CREATE MORE SUCH QUALITY  
CONTENT FOR YOU!

JUST ₹10-20 WILL BE APPRECIABLE! :)



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